

Abstract

The aim of research work is to demonstrate the power of using intelligent agents in the stock market domain. In the stock market, traders, whether experienced or naïve, are increasingly relying on software tools hoping to get some help in making profitable financial decisions. Some of these software tools are based on fundamental analysis; others apply technical analysis, while the more sophisticated tools use both techniques in addition to providing a large category of data graphs. However, these tools are not always sufficient for stock market analysts to make the correct buy and sell decisions. The stock market is a very complicated medium which is affected by many factors such as news, weather, and politics which all affect our perception of the market. The stock market is also affected by human behavior; when investors trade under pressure they tend to take decisions based on their fears or greed thus making incompetent, costly decisions.

In this research work, we take stock market analysis tools one-step further by using collaborative agents to help bringing more objectivity to the process of buying and selling shares. The aim of the thesis is to illustrate the power of using agents in these tools and the advantage of modeling investors' characteristics. An industry standard software application is beyond the scope of this tool, we introduce in the research work an agent-based prototype that contains group of agents designed to perform certain tasks with a meta agent capable and issuing the correct buy and sell signals. The first group models traders with different characters, personalities and motivations. The second group represents the decision-making process depending on technical analysis signals, some basic companies' ratios, and human personalities. The third group of agents represents data gathering, newsgathering and detailed analysis.